1956

ANNUAL REPORT

1956

THE COMMONWEALTH OF MASSACHUSETTS: Dept. of
natural resources; DIVISION OF FISHERIES AND GAME
73 TREMONT STREET, BOSTON 8

THE COMMONWEALTH OF MASSACHUSETTS

DIVISION OF FISHERIES AND GAME

73 Tremont Street, Boston 8

His Excellency, Foster A. Furcolo, Governor of the Commonwealth,
The Executive Council, The General Court, and the Board of
Fisheries and Game

Sirs:

I have the honor to submit herewith the Ninety-first Annual Report of the Division of Fisheries and Game, covering the fiscal year from July 1, 1955 to June 30, 1956.

Respectfully submitted,

Charles L. McLaughlin

CHARLES L. McLAUGHLIN

Director

DIVISION OF FISHERIES AND GAME

NINETY-FIRST ANNUAL REPORT

TABLE OF CONTENTS

Report of the Board 1

Bureau of Wildlife Research and Management:
- Game Section 2
- Fisheries Section 6
- Wildlife Cooperative Research Unit 15

Information and Education Program 16

Propagation:
- Fish Hatcheries 19
- Game Farms 20

Distribution of Stocked Game and Fish 20

Public Fishing Grounds 22

General Administration
- Tables: How the Sportsman's Dollar Was Spent 24
  - Appropriations and Expenditures 25
  - Summary of Fish and Game Income 26
  - Receipts from Fishing, Hunting and Trapping Licenses 27
  - Analysis of Special Licenses 28

Summary of Outstanding Regulations 29

Legislation 30

REPORT OF THE BOARD

The Board of the Division of Fisheries and Game is pleased to report continued progress and achievement during the fiscal year 1955-1956. The financial status of the Division remains in a healthy condition although a decrease in the surplus in the Inland Fisheries and Game Fund is noted from the prior year. This decrease was partly due to non-recurring expenses resulting from damage to some of our properties during the August 1955 flood.

A slight reduction in license sales during the year was reflected in a corresponding reduction in revenue. A late and rather unpleasant Spring resulted in some decrease in sales of fishing licenses but the license sales picture is being thoroughly analyzed to detect any significant trend.

The surplus in the Inland Fisheries and Game Fund at the close of the fiscal year was $587,079.26, which is more than adequate. For this reason, the Board will continue to request the appropriation of money for the purchase of suitable land to be managed for hunting whenever such land is available at reasonable cost. Several tracts of land were acquired by the Division during the past year and others are being negotiated at this writing.

The opening of several large bodies of water to fishing which had hitherto been closed and held exclusively as municipal water supply systems is one of the major recent developments. The opening of these waters to fishermen was brought about through the co-operation of Local Water Commissions, Sportsmen and the Division of Fisheries and Game. This trend holds great promise for the future.

The result of pond management work both for trout and warm water species becomes increasingly evident each year. Sportsmen have been quick to note the beneficial results and are looking for waters of the Commonwealth not yet under management to be brought into the program. This program will be expanded as rapidly as available manpower and funds will permit.

The Division of Fisheries and Game is today a coordinated organization capable of producing fish and game and capable of producing good hunting and fishing in available areas. Our major problem will continue to be adequate places to fish and to hunt for a sporting population which will be constantly on the increase. The Division recognizes this problem and with the cooperation of the sportsmen will meet the challenge.

The transfer of our Field Headquarters and Wildlife personnel from Upton to the new location in Westborough has been completed. The facilities at Westborough are most satisfactory and future needs can be met at this location with a minimum capital outlay.

A fond hope of the Division has been realized with the publication of "MASSACHUSETTS WILDLIFE" in magazine form. The value of this magazine as a medium for wildlife information and education cannot be overestimated. The magazine will be dedicated to education in sound conservation and the dissemination of information on the best in wildlife management practices.

Robert H. Johnson resigned as Director of the Division of Fisheries and Game in October, 1955, to assume new responsibilities as Assistant Director of the Federal Fish and Wildlife Service in Washington, D. C. In November, 1955, the Board appointed Charles L. McLaughlin as Director. Mr. McLaughlin was formerly Chief Game Biologist for the Division.

In March, 1956, the Board elected Matthew T. Coyne, Chairman, and Frederick A. McLaughlin, Secretary.

Sincere appreciation of the Board is expressed to the many people involved in all phases of our operations within and outside the Division who have been helpful to us during the past year.

Per order of the Board

s/ MATTHEW T. COYNE, Chairman

s/ FREDERICK A. McLAUGHLIN, Secretary

* *

BUREAU OF WILDLIFE RESEARCH & MANAGEMENT

Game Section
Fisheries Section
Cooperative Research Unit

The four wildlife management districts, set up in 1951 to facilitate conducting the many activities of the Division with a minimum of travel required, have proven of inestimable value. District personnel, headquartered in strategic locations in the four general geographic regions of the state, serve as local liaison with sportsmen's groups, federal and other state agencies, and the general public. They conduct research, management, stocking, and development work in both fisheries and game; and a considerable portion of time is spent in education and public relations work.

The general program of the districts, administered from the Field Headquarters in Westboro, is much the same in both fisheries and game work, from the Berkshires to the Cape. Because of differences in geography and species, however, there are activities peculiar to one district that may be secondary, or entirely lacking, in any of the other districts.

Beaver pelt checking stations were operated in the western and central portions of the state; it was here, too, that the majority of the nuisance beaver were live-trapped and transplanted. Bob-white quail, found in the southeastern part of the state, were the subject of a study there, and were inventoried by personnel of two wildlife districts. Water chestnut, a noxious aquatic water plant, was treated with chemicals as a control measure by personnel of the northeastern district. This brief listing serves only to indicate that each district, while functioning under centrally directed administration, was required to extend its activities beyond the usual scope.

Certain phases of the annual work program, particularly in game management, lend themselves to easy tabulation of work accomplished. For convenience, the game activities of the four wildlife management districts have been grouped under appropriate headings in the table. Fisheries work is reported under the Fisheries Section, and information and education activities are reported in the report of the I & E Section.

GAME SECTION

WILDLIFE MANAGEMENT DISTRICTS

	All Districts Completed
I. Federal-Aid Projects, Game (See Federal-Aid Projects Report)	
Wood Duck:	
Boxes built this year	428
Boxes maintained	1,286
Predator guards built and installed	510
Total boxes erected this year	301
Number areas involved	65
Boxes distributed to clubs, etc.	152
Boxes checked for usage	1,030
Wood Ducks banded	17
Checking Stations Operated:	
Deer	7 stationary 4 mobile
Beaver	6
Census:	
Muskrat areas censused	12
Quail census trips	28
II. Habitat Improvement	
Plantings:	
Number of plants set	7,000+
Farms and other areas involved	75
Plants distributed to clubs, landowners, etc.	3,000+ and seed
Fence rows, borders, etc., treated - lineal feet	8,000+
Food patches planted, areas prepared	250+
Acreage under farm-game program	50,000+
III. Game (Non-Federal Aid)	
Cottontail Live-Trapping and Transfer:	
Number of traps built this year	85
Number maintained	325
Number distributed to cooperating live-trappers	245
Damage sites investigated	55
Beaver:	
Damage complaints investigated	38
Nuisance beaver live-trapped and transplanted	37
Release areas surveyed and checked	20
Research Data Contacts:	
Grouse wing and tail collection points	230
Number of collection containers distributed	6,650
Woodcock census	all districts
Clubs Assisted with Game Projects	40

Federal Aid in Wildlife Projects

Twelve projects have been operated during the past year under the Federal Aid to Wildlife Act. Under this Act, the state is reimbursed by the federal government for 75% of the costs of investigation, management, development and land acquisition projects, the monies being derived from an 11% federal excise tax on sporting arms and ammunition. All federal aid projects are administered by the U.S. Fish and Wildlife Service, under the direct supervision of the Division of Fisheries and Game.

Major contributions have been made to the information available on several game species -- information which is a valuable asset in management of the species. Semi-technical reports on these studies are being readied for publication and distribution to other wildlife agencies and the sporting public.

Briefly, the following summaries highlight the activities of the projects which were active during the past fiscal year:

White Tailed Deer Study

Project 7-R: During the 1955 open season, 4,127 deer were reported killed. Division personnel, manning checking stations located strategically on major highway road nets, checked 1,505 deer; bucks represented 56% and does represented 44%, to conform to the 40-year average previously tallied.

Reproductive tracts were collected from cooperating sportsmen and the laboratory analysis was done at Springfield College. A graduate student at the Wildlife Research Unit at the University of Massachusetts is compiling and evaluating the data collected for the past 10 years, on a geographical basis.

Farm Game Restoration

Project 9-D: Farm game restoration work was carried out on 75 areas (farms, game club lands, town land and Division-owned lands); 50,000 acres are being made more suitable for wildlife through habitat improvement work. Management work included establishment and maintenance of fall and winter food patches, planting of conifers and shrubs, reclaiming abandoned fields, cutting back fence rows and woods borders, posting of safety zone posters and other appropriate posters.

Water Chestnut Control

Project 10-D: The Northeastern district applied chemical herbicides to portions of the Sudbury and Concord Rivers and the College Ponds in South Hadley as a control measure toward eventual elimination of this noxious aquatic weed.

Furbearer Investigations

Project 16-R: The manuscript for the final report of this project was prepared from the mass of data collected during the study on the more economically important furbearers of the state. Printing and distribution of the report bulletin are planned for early 1957.

Wood Duck Nesting Investigation Project

Project 19-R: Field work has been completed and the write-up on the final report was begun. The publication, a semi-technical bulletin, will summarize the information collected, and provide a plan for management of the species in Massachusetts.

At the 150-acre Great Meadows study area, it was noted that 758 ducklings hatched in the 62 successful nests -- this, in spite of extended cold weather and repeated blizzards which delayed the arrival and buildup of woodducks in the spring of 1956.

Birch Hill Investigations

Project 20-R: Birch Hill Public Hunting Grounds has two projects being carried out there. This project is concerned with making periodic appraisals of game populations, and management methods being used. (Its companion project is concerned with developmental work on the area.)

The Cottontail census indicated a slight drop in numbers; this may have been caused by excessive fall and winter flooding. The post-season census on varying hare indicated no appreciable change over the previous year. Only 17 hare tags were returned from a release of 100 hare released in-season. The fall grouse census, also probably influenced by high waters, showed a slight decline.

There was a 56.1% return of leg bands from the 547 cock pheasants released. Hunting pressure increased materially over previous years. Muskrat, mink, otter and beaver were trapped on the area, but fewer pelts were taken than during the year previous.

Birch Hill Development

Project 21-D: Maintenance of buildings, equipment, roads, signs, bridges and dams are routine functions, but constitute a large part of the program. Habitat improvement work included the planting of 2,200 wildlife trees and shrubs; 20 acres of food patches planted to grain, legumes and grass; and the clearing of 8 acres of brush land for fall planting.

Strip thinnings were made on 1,000 feet of red and white pine plantations to open the dense overstory and encourage establishment of new growth. Selective cutting in mature soft woods yielded 20,000 board feet of lumber for use by the Division.

Cottontail Rabbit Experimental Management Area

Project 22-R: An estimated 250,000 cottontails are shot annually by Bay State gunners. The project is set up to develop and evaluate management methods best adapted to local covers, to insure continued hunting potential for this, the most popular game species in the state. Live-trapping, tagging and release of cottontails as a census method reveals a rising population in 1956.

A statistical analysis of data collected for a period of 7 years is expected to provide a valid comparison of management methods in use.

Cock Pheasant Stocking Investigation

Project 23-R: An effort is being made to determine if the stocking of hens is necessary to maintain a population of wild birds. A comparison of the kill of banded cocks against unbanded "native" cocks is being made in two adjoining counties, one of which has had no hens stocked for the past two years. Preliminary data indicate that higher bag returns are realized from birds stocked close to the gun season, or in-season, than from birds stocked two months before the open season.

Quail Project

Project 25-R: Field work, office analysis of data, and preparation of the final report was largely completed. It is contemplated that a semi-technical bulletin summarizing the project activities will be published early in 1957 for distribution.

Maintenance of Woodduck Nesting Boxes

Project 26-M: Periodic checks are made of all nesting boxes erected to date, and limited numbers of new boxes are erected where necessary. Detailed summaries are listed under wildlife management district activities.

Ecological Survey

Project 27-R: See report of the Massachusetts Cooperative Wildlife Research Unit at the University of Massachusetts.

Land Acquisition

The Division now owns 2,247 acres of wetlands, upland and forest land as public hunting areas. In addition, 10,477 acres are being administered as public hunting areas under permit, license, or agreement with the owning agency.

During the past year 1,855 acres of land were purchased; it is anticipated that these holdings may be expanded by additional purchases in adjoining tracts.

Habitat development work is being carried out on five of the wildlife areas. The other areas will be developed and managed for game species as needs, funds and manpower permit.

State Game Projects

The state game projects (non-Federal Aid) are carried out in the districts and a summary of these activities can be found in the district reports.

For the second consecutive year, the districts handled the stocking of all pheasants and during the past winter undertook the liberation of white hare.

FISHERIES SECTION

FEDERAL AID FISHERIES PROJECTS

(75% of the cost of these projects are reimbursed by federal tax monies on fishing tackle under the Dingell-Johnson Act.)

Stream Investigations

During the past year the fourth and final segment of a project designed to obtain fundamental fishery information relative to the management of streams in this state, both for trout and warm-water species, was completed. The work finalized this year was on the Taunton and North River drainages. Previously, work had been completed on the Westfield, Millers, Squannacook, Merrimac, and Ipswich River drainages. Findings for the Taunton and North River drainages substantiated those reported previously for the other drainages.

Stocking. Massachusetts is largely a put-and-take trout state. Stocking is

the most important management tool to provide trout fishing in any of the streams investigated. This is readily understood when one realizes that in Massachusetts between 90 and 95 percent of all trout taken during the season are the current year's hatchery production. The major facet of management revolves, then, around stocking hatchery-raised trout at a size, at a time, and in areas which will give maximum returns to the fishermen. At the present time only one out of every three trout stocked is harvested by the sportsmen, and thus out of his license monies each trout fisherman must pay for the ones that are not taken. This raises the cost of trout in the creel to between two and four dollars per pound, depending upon the success of harvest in a particula stream or from a particular lot of fish. Evidence gathered for Massachusetts streams indicate that maximum returns and the most sustained angling can best be realized by stocking as close to opening day as possible, as well as by frequent in-season stocking. Trout stocked just prior to opening day, or in-season, gave just about double the return to the fishermen over trout stocked in March. Fishermen success can also be increased by stocking larger fish. Actual tag returns, by size lots, from the 85,239 tagged trout stocked over the last four years shows that best returns are experienced from good size fish (eight inches plus) as compared to smaller size fish (six to eight inches). Present hatchery size objectives should be raised to eight inches. Reduced numbers would be compensated by this larger, more harvestable size.

Regulations. As a result of the findings of these studies, the trout season was changed in 1954 to run from the third Saturday in April to the third Saturday in October, and all size limits were abolished on trout in 1955. Also, abolished in 1955 were the restrictions on night fishing for trout. Several other recommendations regarding regulations have been made, as follows:

1. Reduce the daily bag limit from twelve to six fish per day for the first four weeks of the season, after which allow the present daily bag limit of twelve fish to prevail. The purpose in doing so would be to provide the most sustained angling for the most people commensurate with maximum harvest returns of relatively expensive hatchery trout before that period of high summer water temperatures when most fish not caught will be lost.

2. Remove present restrictions on the taking of bait fish for commercial use from public fishing ground areas.

3. Legalize spring sucker spearing during that part of the closed season that falls in March and April.

4. Manage all streams stocked with trout for trout and as such remove restrictions of bag, size limits, and season on all other species except to honor the general statewide closed season from March first to the third Saturday in April with the exception of spring sucker spearing, as per recommendation (3).

Recommendations (2) and (3) are advocated partially as a limited rough fish control measure as well as allowing for wise use of an unexploited renewable resource. The chain pickerel found in the Taunton and North River drainages illustrate the utter lack of need for protection. A total of 1,682 chain pickerel were collected, yet, only 75, or 4 percent, were legal-size fish. The reason for this is that most die a natural death prior to reaching 14 inches in length. Such streams are only rarely fished at the present.

Stream Improvement. We actively encourage and support the pollution control and abatement recommendations put forward for Massachusetts' streams by the

Massachusetts Department of Public Health. Such recommendations if implemented would generally clean up obnoxious pollution conditions. The value of generally accepted stream improvement structures such as V-dams, deflectors, etc., is questionable in correcting for the limiting factor of high summer water temperatures and low flows. It is believed that the use of such structures should be minimized in favor of stream bank plantings to increase shade and reduce bank erosion. The possibilities of creating greater summer flows through either the creation of multiple wildlife-use ponds and marshes or by modifying current water usage procedure in existing facilities, such as U. S. Army flood control storage reservoirs, should be thoroughly explored. The possibilities of the use of explosives to increase water depths and modify habitats should likewise be investigated.

Population Manipulation. The possibilities of tipping the equilibrium in marginal trout streams in favor of trout by controlling or eliminating competition from other species should be investigated. Stream rehabilitation as compared to lake rehabilitation with chemicals is only in its infancy, but it would seem to hold great promise in providing additional food stocks for newly-planted hatchery trout, thereby possibly decreasing initial stocking losses, and in improving the environment for greater summer carry-over and growth of trout.

Salter Trout Study

Information continued to be gathered on the behavior of brook trout stocked in five Cape Cod tidal streams, in order to determine if areas of this sort could be utilized to establish sea-running, or "salter" populations. Tagged brook trout have been stocked in the study areas, and their movements checked. Migratory patterns show an upstream migration of trout from tidal waters during the fall months, fluctuating upstream and downstream movements associated with spawning activities during the early winter, a downstream movement in the late winter, and a spring upstream movement beginning in early March. The fact that stocked brook trout migrate into salt water, and are not confined to brackish tidal areas, is pointed up by numerous returns of tagged fish stocked in study areas and recovered in other streams accessible only by comparatively long trips along the Cape Cod shore.

During the year 1955-56, this project consisted of two phases. One phase consisted of the intensive study of five known salter streams through stocking marked fish, creel checks, and population inventory with the electric shocker. The other phase consisted of a reconnaissance survey of most coastal streams to learn whether any of these could be profitably managed for salter brook trout.

Quabbin Reservoir Investigations

An estimated total of 32,297 fishing trips were made on Quabbin Reservoir during 1955, with the boat fishermen contributing 60.2 percent, the shore fishermen 26.0 percent, and the night fishermen 13.8 percent. This amounted to 1.3 trips per acre for the total acreage or 1.9 trips per acre for the area open to fishing.

A total of 27,818 boat and shore fishermen fished 156,112 hours to catch an estimated total of 90,790 fish weighing 29,794 pounds. The average fishing trip was 5.6 hours in length. Fishing success amounted to 0.6 fish per hour weighing 0.2 pounds.

There appears to be no significant difference between the 1954 and the 1955 harvest in the reservoir. The catch per hour in 1954 was 0.62 fish weighing 0.22 pounds, and in 1955 it was 0.58 fish per hour weighing 0.19 pounds.

The early bass season initiated on Quabbin Reservoir produced only one bass for each eleven acres of fishable water. A large 1954 year class should provide sustained if not improved fishing for this species in the future.

An attempt to estimate total fishermen catch as opposed to take-home catch by use of plastic bags failed through insufficient cooperation by the anglers. More thorough publicity on what was being attempted would probably rectify this in another attempt of this type.

A more adequate age and growth sample was collected due to the younger year classes of fish present in the plastic bag collections, as well as a larger sample of fishes considered undesirable by the anglers. This alone could justify the inclusion of a plastic bag collection in a creel census program.

Six coves with a total surface area of 9.0 acres were selected as permanent study areas to be sampled yearly with rotenone. Good game and pan fish reproduction was found, as well as a variety of forage species.

A large 1954 year class of largemouth bass was indicated by all methods of sampling and indicates sustained bass fishing for the future.

Survival of introduced species of lake trout, and yellow pike-perch was found through gill netting and in checking angler creels.

Trout Pond Reclamations

During the past year 8 ponds qualifying for trout management were reclaimed and stocked with fingerling and adult trout. From these 827 acres were removed 17,701 pounds of assorted warm-water fishes (Table 1). In the absence of competing warm water species many of the fingerlings stocked in the fall of 1955 came into the catch in 1956.

The following is a summary of conclusions reached in regards to the trout pond program. (1) Size limits are of no value and may be a definite hindrance in managing trout in reclaimed ponds. (2) The law of supply and demand efficiently regulates a reclaimed trout fishery, consequently, the length of the fishing season can only be set arbitrarily. Preferably, the season should include the spring and fall months, when fishing is the best due to favorable water temperatures, and also the summer vacation months when most campers wish to fish. (3) Trout should be grown fast and heavily harvested in the 8-12 inch size in order to make way for the next crop. (4) Forage fish for trout are not needed, and any forage species introduced as such will cut down on trout production. (5) Winter growth can be as fast as summer growth. (6) The best period for reclaiming deep stratified ponds generally falls in the month of September when the heat budget is at a maximum for the year, and just prior to the fall overturn. (7) Restocking should be done the same fall as soon as the pond becomes non-toxic. (8) A good rule-of-thumb stocking rate is 100 fall fingerlings (3-5 inches in length) per acre, although this is dependent on pond productivity and may vary. (9) Maintenance stockings are best made in the fall when water temperatures are below 70° F. (10) Spring fry plants are subject to extremely variable mortalities. (11) Drastic draw downs prior to reclamation will almost invariably result in incomplete fish kills.

FISH MANAGEMENT ACTIVITIES

Fyke Netting Activities

During this period 10,091 pounds of weed fish and stunted pan fishes were removed from eight ponds being managed by this method (Table 2). The removal of these fishes permits those remaining to attain larger and more desirable sizes. This activity is akin to weeding one's garden or to thinning down a row of carrots. In order to establish a healthy, thriving population of any species that population must have a certain amount of space to expand into, and a certain amount of surplus food available. Overcrowded populations of fishes have neither, and drastic thinning is often necessary to provide better conditions, both for the fish and the fishermen.

Warm Water Pond Reclamation

During the past year 11 ponds totalling 337 surface acres (Table 3) were reclaimed for warm water species. This program consists essentially of killing the fish population from a pond through the use of rotenone, where the need has been adequately demonstrated by initial creel census and survey sampling, and restocking with a balanced and desirable species complex. Requests for this type of work from sportsmen's clubs, lake associations, and civic groups has increased tremendously as the benefits derived in improved fishing become more apparent. Results to date are extremely encouraging even though much remains to be learned in how to properly manage such waters.

Partial Reclamations

Partial eradications up until 1955 in Massachusetts had been aimed at improving fishing for warm water species. In that summer a target of opportunity presented itself to similarly treat Big Alum Pond, Sturbridge, to improve the angling for both warm-water species and trout as well. Several complaints were received relative to a severe fish kill. Reports from local residents and field investigation corroborated that the kill had been exceptional and largely restricted to smallmouth bass and sunfish, even though the bulk of the fish had been removed and buried prior to field examination. Cause of the die-off was obscure. Accordingly, the complete shoreline, all coves, and several acres of open water were selectively treated with a light concentration of rotenone. Although two and one-quarter tons of fish were killed only about one percent consisted of game fish (bass, pickerel, and one trout). Fingerling and adult trout plus smallmouth bass were stocked in the void made by the partial reclamation. According to local residents, trout fishing was greatly improved in the spring of 1956. Brook trout stocked as two to three inch fingerlings in August had grown to six to eight inches in length by the following May. This technique offers great promise in vastly improving the trout fishing in certain types of large trout ponds that cannot be reclaimed dur to one reason or another.

The program of partial poisoning warm water ponds has been expanded over that of last year and likewise shows tremendous promise of more adquately accomplishing the objectives of fyke net thinning. All told, four lakes totalling 1,020 surface acres were treated during the fiscal year. A total of 25,293 pounds of fish were removed from these lakes (Table 4).

Experimental Fish Culture

Bass and pickerel were again raised at the Harold Parker System, North Andover and the Sutton Pond System. From the bass rearing ponds at North Andover 48,590 fingerlings from 4 to 10 inches in length were stocked in managed public waters in

the fall of 1955. This figure more than doubled the 1954 fall production, and reflected the success of new cultural methods.

Although the hurricane of August, 1955 virtually wiped out the Sutton system, 10,056 chain pickerel, from 4 to 12 inches in length were salvaged and distributed. Extensive repairs to this system were begun early in 1956.

Experimental Stream Reclamation

Although reclamation of suitable ponds for trout has become a valid and accepted fisheries management technique, the principles involved have only limitedly been applied and evaluated in regards to streams. In 1955, three small streams were reclaimed and subsequently stocked with fingerling trout, plus catchables the following spring. These streams were inventoried a year later using various fish sampling gear. Results were compared with original survey findings, fish samples collected at the time of reclamation, or both. In summary, it can be said that the technique of reclaiming streams stocked with trout looks promising, but many questions need to be answered through additional research.

Opening of Closed Water Supplies to Public Fishing

Through the cooperative efforts of the Division of Fisheries and Game, local and state health officials and local sportsmen, five drinking water supply reservoirs (4,233 surface acres) previously closed to angling were opened. There is little validity in the fears that the water standards will be lowered in these reservoirs as a result of controlled public fishing. This has never been shown to have occurred in instances of this type. Shorter working hours and the resulting increase of leisure time demand that every municipality and agency concern itself with fostering channels of healthful recreation. Demands upon our water areas are becoming greater each year, and the multiple usage of surface water must be accepted as becoming an integral part of our way of life, as it has become in other communities.

Trout Distribution

For the first time, the total statewide trout distribution was carried out by Division of Fisheries and Game personnel. Formerly, Conservation Officers of the Division of Law Enforcement and personnel of the Propagation Section were responsible for the operation. However, Conservation Officers gave freely of their services and advice in assisting Division of Fisheries and Game personnel in accomplishing this herculean task. Altogether, 303,390 pounds or 1,060,127 catchable trout were distributed to the streams and ponds of the Commonwealth. In addition, 1,485,000 fingerling trout were distributed as well.

Inventory and Evaluation Activities

Any fisheries program that is designed to benefit the sportsman in improved fishing must of necessity be an active one. Consequently, such a program quickly encounters a wide range of frustrating problems for which there are no available answers. It must then set out to find these answers. Therefore, many kinds of year-to-year management activities are engaged in much as inventories of "stock" and "sales" are periodically done in supermarkets.

The following summary illustrates the magnitude and variety of such activities. Fourteen ponds were fyke netted, 41 ponds spot poisoned, ten ponds seined and 11 ponds gill netted so as to determine growth rates, population balance, reproductive success, and survival rates of the fish populations in these waters.

The majority of these waters are ponds that are under intensive management through reclamation, partial poisoning or fyke netting. It is vital that a continuous program of evaluation concurrent with management be carried out for the purpose of improving current management technique. Less obvious than the field work in procuring necessary fish samples but equally important is the laboratory analysis of such data. The key to such analysis generally revolves about the aging of fish samples. During the last year over 15,000 individual fish were aged through the scale method. Sample checks of angler creels, besides yielding information on growth and survival rates of stocked fish, also measures fishermen success. On the opening weekend of the 1956 trout season 3,423 anglers were contacted on 22 reclaimed trout ponds. These anglers had fished 10,162 hours to take 3,257 trout at a rate of 0.32 trout per hour. Four reclaimed trout ponds were similarly checked the previous fall. A total of 116 anglers were checked who had fished 299 hours to take 219 trout or 0.73 trout per hour. It can be seen from this limited sampling that apparently fall trout fishing is considerably more productive per unit of effort than spring fishing. Ten managed warm-water ponds were similarly checked periodically during the season. Billington Sea, Plymouth, is an example of the kind of information sought and secured from these latter ponds. Here, during the ice fishing season, 132 fishermen were checked, who had caught 70 pickerel, 330 yellow perch, 6 white perch, and 5 bass. The catch rate averaged 1.7 hours per fish and all of the fish were of large size (pickerel averaged 20 inches) indicating the success of the management done here a few years previous.

There were many other activities engaged in, which although not providing immediate fishing, form the base upon which future, and better, management will be built. The physical and chemical characteristics of 37 ponds were checked during the past year. An intensive creel census was initiated on Asnacomet Pond, Hubbardston, to obtain harvest information on a good trout pond for two years before and two years after reclamation. Two other small reclaimed trout ponds were studied through an intensive type creel census. Several ponds and lakes were the subject of intensive winter creel censuses to obtain information on winter fishing, which has come to rival that of summer fishing in importance on some waters.

Publications

Several popular and technical fisheries articles were prepared and published. Copies may be obtained by writing the Division of Fisheries and Game, Field Headquarters, Westboro.

(1) Individual one page fliers for 56 specific ponds and lakes showing location, access, facilities available, stocking histories, pond depths, and other pertinent information relative to fishing. Printed.

(2) "Fishing in the Drink at Quabbin Reservoir". Published in Jan.-Feb. issue of MASS. WILDLIFE.

(3) "What's in Our Trout Streams?" Published in March-April issue of MASS. WILDLIFE.

(4) "Better Fishing - With Trout Pond Management." Published in May-June issue of MASS. WILDLIFE.

(5) "Largemouth Bass in Massachusetts." Published in May-June issue of MASS. WILDLIFE.

(6) "Harvests and Management of Warm-Water Fish Populations in Massachusetts' Lakes, Ponds and Reservoirs." Published in the Progressive Fish-Culturist.

(7) "Trout Fishing at Cliff Pond, Brewster, Massachusetts." Mimeographed.

(8) "The Comparative Returns of Various Sizes of Trout Stocked in Massachusetts Streams." Published in the Progressive Fish-Culturist.

(9) "Returns from Tagged Discard Brood Stock Trout, 12-28 Inches in Length, Stocked in Massachusetts Ponds and Lakes." Mimeographed.

(10) "The Problem of Public Access to Great Ponds." Mimeographed.

Miscellaneous Routine

There are literally hundreds of relatively unglamorous activities engaged in over the year that require in the aggregate a tremendous amount of time and which are vital to the fisheries program, but which are not easily reported on in tabular form. Such activities include: Posting of ponds; the repair, maintenance, and building of fish screens and dams on some waters; salvage and transfer of predator and forage fish for use in managed waters open to fishing, cultural ponds, and for use in experimental biology studies conducted by universities; fertilization and water level manipulations on cultural ponds; purchase and distribution of supplies and equipment; maintenance and repair of property, equipment, and supplies; installation of rights-of-way and sanitary facilities at some reservoirs; field investigations on fish kills and pollution complaints; processing of applications for federal trout and bass, and in some cases, distribution of these fish; promotion and assistance to clubs and civic groups relative to kids fishing derbies, as well as the stocking of some waters for this purpose; preparation of material for countless news releases and articles; trouble shooting, advice, and correspondence relative to countless problems affecting water areas such as weed problems, leeches in a pond, parasites in fish, crayfish along swimming beaches and in industrial inlets from ponds; sportsman club, civic group, federal and state meetings; assistance and advice to other government agencies on fishways, pollution studies, weed control, techniques and methods, etc.; instruction on fish conservation at camps and schools; demonstration stream improvement; general correspondence; keeping abreast of fishery activities and techniques in other areas; and attending public hearings on rights-of-way, changes in regulations, flood control, opening closed reservoirs to public fishing, etc. The last year was a full one in respect to the foregoing activities mentioned.

Table 1. Summary of fish populations removed from ponds reclaimed for trout, July 1, 1955 to June 30, 1956.

Pond, Town	Area (Acres)	Weight of Fish Removal (Lbs.)		
		Game Fish	Pan Fish	Weed Fish
Ashland Res., Ashland	155	135	103	427
Lake Mattawa, Orange	112	999	5,424	286
Peters Pd., Sandwich	127	113	2,605	3,477
Bailey Pd., Amesbury	14	5	256	41
Wallum Lake, Douglas	322	390	3,419	21
Round Pd., Truro*	3.5	---	---	---
Berry Pd., No. Andover*	5	---	---	---
2 Quarry Holes*	0.5	---	---	---
Totals	827	1,642	11,807	4,252

* Used for experimental purposes even though public fishing is allowed.

Table 2. Summary of reductions in overcrowded fish populations by fyke netting July 1, 1955 to June 30, 1956.

Pond, Town	Area (Acres)	Weight of Fish Removal (Lbs.)		
		Pan Fish	Weed Fish	Total Wgt.
Duck Pd., Groton	52	455	154	609
Massapoag Pd., Dunstable	113	1,006	510	1,516
Spy Pd., Arlington	103	590	275	865
Indian Lake, Worcester	177	2,456	98	2,554
Lake Winnecunnet, Norton	148	1,186	130	1,316
Pontoosuc Lake, Pittsfield	480	384	179	563
Mossy Pd., Clinton	129	600	100	700
Coes Reservoir, Worcester	90	1,692	276	1,968
Totals	1,292	8,369	1,722	10,091

Table 3. Summary of fish populations removed from ponds reclaimed for warm-water fishes between July 1, 1955 and June 30, 1956.

Pond, Town	Area (Acres)	Weight of Fish Removed (Lbs.)			
		Game Fish	Pan Fish	Weed Fish	Total Wgt.
Ruth Pd., Brewster 1/	5	---	187	187	374
Rocky Pd., Plymouth 3/	19	100	1,186	620	1,906
Muddy Pd., Barnstable 2/	33	7	665	515	1,187
Maquan Pd., Hanson	48	287	5,373	2,300	7,960
Lower Pd., Saugus	19	167	973	330	1,470
Long Pd., Tewksbury	39	141	1,772	524	2,437
Little Island Pd.,Plymouth	32	---	1,310	488	1,798
Keders Pd., Brewster 1/	3	---	100	200	300
Lake George, Wales	93	279	9,068	103	9,450
Flax Pd., Bourne	22	6	2,150	4	2,160
Fearings Pd., Plymouth 3/	24	154	2,330	170	2,654
Totals	337	1,141	25,114	5,441	31,696

1/ Population estimated but not measured.

2/ Reclaimed by the Barnstable Sportsmen Club.

3/ Reclaimed twice - the first time with experimental rotenone.

Table 4. Summary of reductions in overcrowded fish populations by partial reclamations July 1, 1955 to June 30, 1956.

Pond, Town	Area (Acres)	Weight of Fish Removed (Lbs.)			
		Game Fish	Pan Fish	Weed Fish	Total Wgt.
Lake Boone, Hudson	175	506	9,016	225	9,747
Big Alum Pd., Sturbridge	195	45	4,000	55	4,500
Laurel Lake, Lee	170	119	320	588	1,027
Pontoosuc Lake, Pittsfield	480	269	822	8,928	10,019
Totals	1,020	939	14,158	9,796	25,293

MASSACHUSETTS COOPERATIVE WILDLIFE RESEARCH UNIT

General

There were a number of talks given by Unit personnel before sportsmen's clubs and other groups describing Unit projects.

Training of professional personnel continued and several graduates completed either undergraduate or graduate training.

Woodcock Project

The long-term woodcock project continues to provide valuable, original information on this bird which will make wiser management possible. Approximately 200 woodcocks were banded. A method of measuring annual production was developed and progress was made on a technique of aging fall-shot birds. There was evidence of a slight drop in the woodcock population. Annual publications in technical journals keep other workers informed on the Massachusetts studies.

State Ecological Survey

During the fiscal year, vegetative typing of the state from aerial photographs continued with approximately 90 per cent of state area completed. Typing will be finished early in the next fiscal year, and computation of acreages of all land types on a town basis will be completed before the end of the fiscal year.

Ruffed Grouse Project

A technique was developed to estimate acreages of favorable grouse habitat from the ecological survey maps. A method of establishing a grouse spring population index on a state-wide basis is still in an experimental stage.

Evaluation of Forest Types as Game Cover

Further utility of the ecological survey maps is being tested by working out correlation between the crown forest types as depicted on the maps and forest game habitat.

Other Project

Studies are being conducted on this furbearer with the emphasis on its im-

portance as a fish predator in Massachusetts.

Projects Financed by Outside Funds

There are two additional projects not financed by Division funds. One is on methods of porcupine control and the other on control of birds inflicting damage to agricultural crops.

* *

INFORMATION AND EDUCATION PROGRAM

Publication of MASSACHUSETTS WILDLIFE in magazine format for the first time this year represented an achievement that had been a major objective of the information and education program since its inception in November of 1948.

While the magazine represented solid progress for the editorial side of information and education work, progress in audiovisual aids was achieved with addition of three titles to the free film library, and increased television activity, augmented by acquisition of five motion picture projectors for district and headquarters use.

The following report covers the major information and education activity for all units of the Division of Fisheries and Game. While formal information and education activities, such as the magazine, news releases, motion pictures, etc., are conducted by the information and education section, work of an information and education nature, in support of or supplementary to formal activities, is done to varying degrees by other sections in cooperation with the Information and Education Section.

News Releases

The I & E Section issued news releases on 65 separate news stories during the year. The great majority were released state-wide, with a few beamed to selected media. All releases are sent to a limited national list as well. The section also released 60 television news films and 21 newspaper photo releases. TV news films were primarily directed to one major station, although an experimental release was made to all channels on one occasion. Funds and personnel considerations prohibited releasing copies of TV news to all channels each time. Newsphotos were sent to those papers most likely to use them. Most of the TV and news photos were coordinated with printed releases, while some items were covered by visual means alone.

District Wildlife Managers issued approximately 30 news stories within their districts, and secured additional press coverage by personal contact.

Wire service usage of major releases was considerable, resulting in extensive national coverage on several occasions. One TV news strip was used on a national network.

Feature Articles

Three feature articles, two in major state newspapers and one in a national magazine, were instigated by the Division, while several other newspaper features resulted from news release activity. One of the feature subjects was presented as a feature in a major metropolitan newspaper, and picked up by others via wire service all over the country.

Massachusetts Wildlife

Four issues of MASSACHUSETTS WILDLIFE were produced, three of them in the new magazine format. The printing order for the May-June, 1956, issue was 11,000, of which better than 9000 were mailing list distribution and the remainder utilized for internal distribution and as handouts at the Boston office, field headquarters, district offices, fish hatcheries and game farms. Public and parochial schools, teacher's associations, and other educational groups were added as a new category to the mailing list with adoption of the magazine format.

Special Events

The I & E Section instigated and prepared proclamations for the Governor to mark the opening of upland hunting season and to establish"Wildlife Week in Massachusetts." The proclamation for upland hunting season stressed the economic contribution of sportsmen and emphasized necessity for mutual cooperation and understanding between sportsmen and landowners. The proclamation for Wildlife Week stressed wildlife's dependence upon sound natural resource conservation and pointed out the need for public and youth education in conservation.

Exhibits

Following a policy of limiting Division participation in exhibits to only major shows (because of the vast disproportion between cost of exhibits and their educational value), the I & E Section placed an exhibit in the New England Sportsmen's Show in cooperation with hatchery personnel. The exhibit was staffed by I & E, hatchery and district personnel, and was seen by about 120,000 people.

Other shows of a more local nature were assisted by cooperative efforts of the wildlife districts, hatchery and game farm units and I & E, by aiding local exhibitors among the organized sportsmen rather than by placing a Division exhibit as such. It is believed that the major value of display work, public relations, is most economically achieved in this manner. These included exhibits in a garden show, a bank window, two sports shows, a farmer's field day, two county fairs, a boy scout exhibition and a Grange exhibit.

Pamphlets and Booklets

The following literature was prepared and released by I & E Section during the year:

1956 Fish and Game Laws

1955 Annual Report (in cooperation with all sections)

1955 Deer Flier (in cooperation with author, Harney)

1955 List of Closed Towns

Audio-Visual Aids

Increased activity in audio-visual aids was made possible by a more realistic budget than had ever been available for this purpose before. The new dark room and office, consolidated with other I & E facilities in one section of the new headquarters building in Westboro, greatly aided this work. A once-a-month commitment to provide all material for a regularly scheduled animal program on one major TV station was fulfilled, with 12 programs produced. In addition, two special programs were produced on other channels. Station break and 20-second

break material was furnished one station and used during the 1955 deer season.

The audio-visual aids unit was responsible for all television and photo news releases.

All work was completed and release copies of two new 15-minute films obtained and added to the film library, and a copy of another film produced by another state but applicable to Massachusetts problems was purchased. Shooting was started on several other films. Provision of projectors to field personnel and a greatly improved method of handling the free film loan library resulted in maximum usage of all copies of all titles presently carried. Several films were presented on TV. Estimates based on return of film-use cards by organizations and Division personnel indicate that more than 53,000 people, exclusively of TV audiences, viewed Division films during the year.

The photo lab processed several hundred black and white stills for technical reports, as well as all photos needed for publicity, the magazine and other literature.

Conservation Education

Participation by the Division, as one of the many agencies cooperating in operation of the Junior Conservation Camp, continued to be our major effort in conservation education. The I & E Section obtained and scheduled all films used at the camp, as well as scheduling Division instructors who handled game and fisheries management classes. Division personnel, primarily the western district, gave 12 lectures at the camp.

The I & E Section also handled certain publicity services, to encourage organizations to send boys to the camp. A total of 155 boys attended the 1956 eighth annual session.

The new magazine made possible a sizeable contribution to conservation education by providing a regular means of getting printed and illustrative material into the hands of school administrators and teachers. A list supplied by the state Department of Education was added to the mailing list, and a regular feature of the magazine, "Conservation Schoolhouse" is devoted to sources of conservation teaching aids and factual material that can be used by teachers. In addition, most of the other features of the magazine have definite educational value and are so slanted.

General

District personnel were the principal speakers at approximately 275 meetings of sportsmen's clubs, service clubs, fraternal orders, youth groups, garden clubs and other organizations. Each manager averaged close to 70 meetings during the year. Personnel of other sections also spent many evenings and weekends at such meetings, but district managers continued as the Division's primary means of personal contact in the field.

Operation Safety Zone, a perennial special educational campaign, continued with some 10,000 safety zone signs being distributed, and the six landowner-sportsman billboards that have been placed beside highways for several years continued in use. Use of the safety zone signs by sportsmen and cooperating landowners continues to be our most effective measure against closing of towns by local ordinance. Every town that has contemplated closing, and given Operation Safety Zone a try, has remained open to hunting.

Three panfish derbies, an educational effort to encourage utilization of these species, were assisted by Division personnel.

* *

PROPAGATION

Fish Hatcheries

The table given in the distribution office report represents the production and liberation of trout stock to open waters from our five fish hatcheries and a lot from the Fish and Wildlife Service, also the pike perch fry and the final distribution of bass from the Palmer Hatchery. Compared with previous records, the results show that the propagation section has established a new production record above all previous years. Many favorable factors contributed to this success, the basic one was the excellent cooperation of all personnel. Following are some of the highlights most worthy of mention:

On September 30, 1955, Alfred E. Fish, Culturist in charge of the East Sandwich Fish Hatchery, retired. In recognition of his faithful service, the Fish and Game Culturists Association presented Alfred with a purse of money as a parting remembrance from all the culturists and assistant culturists. On October 1, 1955, with the approval of the Director and the Fish and Game Board, the East Sandwich Hatchery became a part of the Sandwich State Fish Hatchery, to be operated jointly under the direction of Fish Culturist Robert B. Macomber.

The hurricane storm of August 18 and 19, 1955, caused severe damage at the Palmer Fish Hatchery, where fourteen inches of rainfall was recorded which resulted in washing out the supply pond dam and loss of bass, trout and shiner stock. Restoration of facilities was made possible by a special appropriation for labor, materials and rental of construction equipment. Work was advanced sufficiently to restock the hatchery system in late Fall so that a normal production was realized this past Spring. A 2-1/2" well was put in just below the highway and above the bass section. The water is of excellent quality and up to one hundred gallons per minute can be obtained from this well. We are certain that other wells can be established to assure sufficient water by pumping for expansion to trout, once the bass section can be reconstructed into trout ponds and shade provided.

In addition to the work at Palmer, all other hatcheries were allotted labor and materials and ponds were rebuilt with either cement or wood. The new section of ponds at Sandwich was completed and will materially add to the output at that station.

For the first time in many years the fish hatcheries experienced a wide variance in the spawning period of brook trout. The brown and rainbow breeders showed no such difference in their spawning.

All fish hatcheries carried on research in nutrition, such as pellets, cortland, supplements and coversion of fats.

The distribution was started to ponds in February and other waters later. The shipments were made through the District Managers with the cooperation of the Conservation officers who have carried on the distribution work very satisfactorily in years past. Some delays were experienced from the late snow. The larger tanks with double water jets have added considerably to the success of transferring the stock to stocking waters.

A tabulation of visitors reveals a great deal of interest being taken by the public as well as organized school groups who visit all of our fish hatcheries. All hatcheries have made improvements to their road entrances and all are now equipped with machines to keep their grounds in good, clean condition.

Game Farms

The production of game birds at the state game farms was slightly decreased for both pheasants and quail although the average ages of stock liberated was increased above the 14 to 15 week average of the previous year.

Holding pheasants to these older ages along with some in season stocking lengthened the rearing season and delayed the usual fall activities of the game farms considerably. Reduction in feed prices during the year made it possible to purchase the increased quantities of feed necessary to hold the stock to these older ages and still keep within our budget.

The Sportsmen's Pheasant Rearing Program compared quite favorably with the previous year's activities, although unavoidable losses were encountered due to the flood disaster. It was remarkable that many of the club pens were not entirely wiped out. Many pheasants were saved by prompt action of the club members.

Some of the sportsmen's versions of what happens to game farm reared pheasants prompted those responsible for the rearing of the pheasants to have all cock pheasants banded. The return of the leg bands to the Division contributes considerably to the future management program, and also enlightens the sportsman to the fact that many of the beautiful specimens and unusually wild birds they shoot can be the products of our farms.

White hares were again purchased by this section of the division, but instead of deliveries being made to the game farm, they went directly to the district game managers for distribution to the covers. 2500 white hares were purchased.

The maintenance and replacement programs at the game farms continue to be major items, the upkeep of the many buildings and replacement of pens require considerable time during the off season. Whenever possible, improvements are being made in our facilities to better handle the stock in an economical manner.

Nutrition and disease prevention and control continue to be vital to our production program.

* *

DISTRIBUTION OF STOCKED GAME AND FISH

During this fiscal year, all phases of wildlife liberation came under supervision of the Assistant Fish and Game Biologist. These various phases included the Sportsmen's Club Pheasant Rearing Program, the trout matching program, white hare releases and the general distribution of birds and fish from the State game farms and fish hatcheries.

The re-evaluation of the pheasant stocking program was completed for every town in the Commonwealth and new stocking quotas established. This re-evaluation was based upon a resurvey by the four District Wildlife Managers of all towns in

FISH DISTRIBUTION TO OPEN WATERS FOR THE PERIOD JULY 1, 1955 to JUNE 30, 1956

(This table does not show stock transferred from one station to another, nor does it show additions to brood stock)

TROUT

STATION	BROOKS		BROWNS		RAINBOWS		LAKE TROUT			
	Under 6"	Over 6"	Under 6"	Over 6"	Under 6"	Over 6"	Under 6"	Over 6"	Total	Total lbs.
Montague	128,000	121,493	----	40,870	121,400	77,436	30,015	----	519,214	75,033
Palmer	32,500	55,426	----	40,518	----	29,507	----	----	157,951	28,710
Sand. & E. Sand.	36,100	135,260	----	22,586	22,652	41,050	----	----	257,648	67,029
Sunderland	58,000	260,335	66,500	126,810	----	----	55,000	3,720	570,365	108,227
Sutton	----	88,500	----	9,100	----	3,500	----	----	101,100	23,951
U.S.Fish & Wildlife Service-Hartsville				4,016					4,016	440
TOTALS	254,600	661,014	66,500	243,900	144,052	151,493	85,015	3,720	1,610,294	303,390

Total Trout Distributed	6-9"	743,960
" " "	9" +	316,167
Total all trout	6" +	1,060,127

PALMER HATCHERY

Wall-eyed Pike Fry	4,880,00	Small mouth Black Bass	- 6"	13,250
		" " " "	6-12"	138
		Large " " "	- 6"	4,300
		" " " "	6-16"	317
		Total		18.005

their districts to determine the amount of available pheasant cover previously open that has been lost to the sportsmen through private posting, town restrictions or closures to hunting, or by the encroachments of civilization.

Town quota for birds and mammals, and stream or pond quotas for fish are established by the District Managers in cooperation with the Chief Game Biologist and the Chief Aquatic Biologist. These are then correlated by this office and shipping instructions are sent to the farms or hatchery with the inventory of stock available as supplied by the two chief culturists. Stocking records and dates are maintained in this office for use in determining further policy or management alterations.

GAME DISTRIBUTION

Game Produced at Division's Game Farms July 1, 1955 to June 30, 1956

PHEASANTS		HENS	COCKS	TOTAL
Adults:	Spring Liberation	2,953	1,253	4,216
Young:	General liberation summer and early fall	21,334	27,879	49,213
	Furnished to pens on Sportsmen's Pheasant Rearing Program	9,964	10,065	20,029
		34,261	39,197	73,458
QUAIL				
Adults:	Spring liberation			610
Young:	General liberation			5,315
				5,925
WHITE HARES (Northern Varying)				
	Purchased			2,500

* *

PUBLIC FISHING GROUNDS

The first part of the year was spent in cleaning up loose ends on the lower Squannacook River. Work was then started in re-leasing the Shawsheen River in the towns of Billerica, Tewksbury, Wilmington and Andover. Since the current trend towards urban development was making inroads along the banks of the Shawsheen, it was necessary to spend much time in determining current ownership. When the leasing was completed the Division had approximately as much land under lease as it had previously. The willingness of the same landowners to again renew their leases tends to indicate that from a landowner's point of view, the public fishing grounds program is acceptable to them. Since the Shawsheen River is subjected to heavy fishing pressure because of the large centers of population within a twenty-five mile radius, this would seem to indicate that fishermen using these public fishing grounds as a whole conduct themselves as gentlemen. The

rapid pace with which houses are being constructed within close proximity to the banks of the river may, within the next five years, cut down considerably the area available for public fishing grounds.

Prior to and during the first two weeks of the fishing season, all the leased areas throughout the state were posted. Since this posting of our leased areas is done as a service to the landowners and fishermen alike and, as a matter of fact, as a service to the general public, it is difficult to understand why every year so many of these posters are wantonly destroyed.

Waters Under Lease for Public Fishing Ground Purposes
as of June, 1956

Stream	Town
Westfield	
East Branch	Huntington, Chester, Cummington, Chesterfield
Middle Branch	Huntington, Chester, Worthington, Middlefield
West Branch	Huntington, Chester, Middlefield, Becket
Millers River	Athol at Bears Den
Farmington River	Tolland, Otis, Sandisfield
Buck River and Clam River	Sandisfield
Squannacook River	Townsend, Groton
Deerfield River	Charlemont, Rowe, Florida
Ipswich River	Middleton, Danvers, Peabody, Lynnfield
Shawsheen River	Billerica, Tewksbury, Wilmington, Andover
Assabet River	Hudson, Berlin

As in the past few years the Public Fishing Grounds Section handled the counting and packaging of all the license holders distributed to City and Town Clerks. Most of the distribution of the holders to the clerks was very ably and efficiently handled by the personnel of the fish hatcheries, game farms and wildlife districts.

In February the personnel of the Public Fishing Grounds Section were assigned to assist in the acquisition, through purchase, of other properties for the Division. The first of these projects was the renewal of negotiations for the purchase of a section of the Quashnet River in the towns of Mashpee and Falmouth. After several conferences, terms were agreed on, and the Division purchased this property, marking the first time in the history of the Division that land was purchased for public fishing grounds. Negotiations for the purchase of a tract of land in the town of Peru for wildlife management and hunting were carried on and toward the end of the year this tract of five hundred forty-five acres in the Trout Brook section of this town were purchased. At the close of the year, negotiations were being carried on for the purchase of other tracts in this same locality. An excellent, well located parcel of land partly in Dalton and partly in Pittsfield was purchased for the future site of the Western Wildlife District Headquarters.

Negotiations were under way for the purchase of land necessary to establish a waterfowl area at West Meadows in West Bridgewater. Other land and water matters concerning the general welfare of the Division were investigated at Charlton, Palmer, W. Bridgewater and Becket.

At the close of the year preliminary ownership surveys were under way on several other parcels of land in which the Division was interested.

* *

GENERAL ADMINISTRATION

"HOW THE SPORTSMAN'S DOLLAR WAS SPENT"

ADMINISTRATION	3304-01			
Administration		79,482.91)	81,633.81	7%
Information-Education			26,088.77	2%
Fish & Game Board		2,150.90)		
PROPAGATION				
Game			224,465.57	20%
Fish			308,414.20	27%
WILDLIFE				
Game	3304-44	6,243.39		
	3304-51	52,938.05		
	*3304-53	120,134.99	179,316.43	16%
Fish	3304-42	97,432.92		
	3304-45	10,901.44		
	*3304-47	39,577.39		
	3304-51	52,938.05	200,849.80	18%
LAW ENFORCEMENT				
	3308-05	6,100.91		
	3308-07	7,396.26		
	1003-03	95,711.84	109,209.01	10%
			$1,129,977.59	100%

* Expenditures under 3304-47 and 3304-53 are reimbursed 75% by Federal Funds

Surplus Inland Fisheries and Game Fund - June 30, 1956 - $587,079.26

COMMONWEALTH OF MASSACHUSETTS
DIVISION OF FISHERIES & GAME

Fiscal Year July 1, 1955 to June 30, 1956

ACCOUNT NO.	TITLE	APPROPRIATION	EXPENDITURES & LIABILITIES	REVERTED
3304-01	Administration	$114,175.00	$105,571.68	$8,603.32
3304-06	Fish and Game Board	2,500.00	2,150.90	349.10
3304-31	Operation of Fish Hatcheries & Game Farms	550,585.00	532,879.77	17,705.23
3304-42	Improvement & Mgmt. of Lakes, Ponds & Rivers	122,303.00	97,432.92	24,870.08
3304-45	Public Fishing Grounds	11,105.00	10,901.44	203.56
*3304-47	Fish Restoration Projects	62,830.00	39,577.39	23,252.61
3304-51	Bureau of Wildlife Research	114,509.00	105,876.10	8,632.90
	Sub-Total:	$978,007.00	$894,390.20	$83,616.80
		CONTINUING ACCOUNT	Expenditures & Reserved	Bal. Forward
*3304-53	Wildlife Restoration	152,815.00	120,134.99	32,680.01
	GRAND TOTAL	$1,130,822.00	$1,014,525.19	

* 75% Reimbursement from Federal Funds

SUMMARY OF FISH & GAME INCOME

July 1, 1955 to June 30, 1956

Fishing, Hunting and Trapping Licenses	$912,297.00 *
Special Licenses, trap registrations and tags	5,882.65 **
Rents	2,634.10
Misc. Sales and Income	839.50
Pittman-Robertson Federal Aid	74,863.45
Dingell Johnson Federal Aid	28,692.11
Court Fines	8,269.75
Refunds Prior Year	98.90
TOTAL	$1,033,577.46

THE PRINCIPAL FINANCIAL ITEMS OF

THIS REPORT ARE IN AGREEMENT

WITH THE COMPTROLLER'S BOOKS

JFS Nov. 8, 1956 (Date) L. A. Burke (signed) (Checked by) TJS

Fred A. Moncewicz (signed)
COMPTROLLER

DIVISION OF FISHERIES AND GAME

RECEIPTS FROM FISHING, HUNTING AND TRAPPING LICENSES

Fiscal Year July 1, 1955 to June 30, 1956

LICENSES	FEE	NUMBER	GROSS AMOUNT	FEES RETAINED BY CLERKS	NET RETURNED TO STATE
Series 1. Resident Citizen Fishing	$3.25	114,070	$370,727.50	$28,280.25	$342,447.25
" 2. " " Hunting	3.25	67,120	218,140.00	16,689.75	201,450.25
" 3. " " Sporting	5.25	49,287	258,756.75	12,269.00	246,487.75
" 4. " " Minor Fishing	1.25	15,802	19,752.50	3,928.50	15,824.00
" 4A " " Women Fishing	2.25	23,022	51,797.50	5,711.00	46,086.50
" 5. " " Minor Trapping	2.25	387	870.75	95.75	775.00
" 6. " " Trapping	7.75	1,253	9,710.75	303.50	9,407.25
" 7. Non-Res. Spec. 3 day Fishing	2.75	2,169	5,964.75	542.25	5,422.50
" 8. " Minor Fishing	2.25	235	528.75	58.50	470.25
" 9. " Fishing	7.75	2,283	17,693.25	563.50	17,129.75
" 9. Res. Alien Fishing	7.75	326	2,526.50	81.50	2,445.00
" 10. Non-Res. Hunting	15.25	1,410	21,502.50	349.00	21,153.50
" 11. " Sporting	20.25	105	2,126.25	26.25	2,100.00
" 12. Duplicate Licenses	.50	2,944	1,472.00	--	1,472.00
" 14. Non-Res. Military or Naval Sporting	2.00	1	2.00	.25	1.50
" 15. Res.Citizen Sporting & Trapping	Free	11,274	--	--	--
" 17. " " Old Age Assistance and to the Blind Fishing	Free	517	--	--	--
TOTALS		292,205	$981,571.75	$68,899.00	$912,672.50
Plus adjustments per closing journal entries					56.00
					912,728.50
Minus Refunds to town clerks					431.50
					$912,297.00 *

DIVISION OF FISHERIES AND GAME

ANALYSIS OF SPECIAL LICENSES ISSUED UNDER SECTIONS 48, 68A, 102-3-4-5-6-7, 112-A, Chapter 131, G.L. during the fiscal year ended June 30, 1956

TYPE OF LICENSE	NUMBER ISSUED	RECEIPTS
Class 1 - Special Fish Propagator's License	212	$222.00
Class 3 - Fish Propagator's License	90	276.00
Class 4 - Propagator's License (Birds or Mammals)	485	1,673.00
Class 5 - Special Propagator's License - No Fee	5	--
Class 6 - Dealer's License	460	686.00
Class 7 - Possession Only License	77	50.50
Field Trial License	2	20.00
Taxidermist License	68	340.00
Resident & Non-Resident Citizen's Fur Buyers License	42	600.00
License to take Shiners for bait	266	1,330.00
Trap Registration Certificates	1,500	558.75
Fish Tags	10,100	101.00
Game Tags	1,628	81.40
TOTAL		$5,938.65
Minus adjustments per closing journal entries		56.00
		$5,882.65 **

August 4, 1948. Rules and regulations for the artificial propagation and maintenance of fish.

August 4, 1948. Rules and regulations for the artificial propagation of birds and mammals.

July 14, 1952. Rules and regulations for hunting with bows and arrows.

January 16, 1953. Regulations for bass spawning areas in Long Pond, Yarmouth and Long Pond, Barnstable and closing the areas to all fishing between April 15 and June 30, both dates inclusive, each year for five years beginning in 1953.

July 1, 1953. Rules and regulations governing hunting of migratory game birds in the state of Massachusetts.

August 12, 1953. Rules and regulations governing sale of protected fresh water fish by licensed dealers in Massachusetts.

March 26, 1954. Rules and regulations governing the display of sporting, hunting, fishing, and trapping licenses in Massachusetts, effective April 9, 1954, and revoking rules and regulations in this regard promulgated on September 23, 1953.

October 29, 1954. Hunting regulations on bird cover improvement area in the town of Ludlow, closing to all hunting until September 24, 1957.

January 28, 1955. Rules and regulations relative to public fishing grounds in Massachusetts.

January 28, 1955. Rules and regulations relative to the tagging of deer in Massachusetts.

January 28, 1955. Rules and regulations relating to the hunting of hares and rabbits in Massachusetts.

November 28, 1955. Rules and regulations relating to the taking of certain fish in Massachusetts, effective January 1, 1956.

November 28, 1955. Rules and regulations relating to the hunting of gray squirrels in Massachusetts, effective January 1, 1956.

November 28, 1955. Rules and regulations relating to the hunting of pheasants, quail, and ruffed grouse in Massachusetts, effective January 1, 1956.

November 28, 1955. Rules and regulations relating to the hunting of deer in Massachusetts, effective January 1, 1956.

November 28, 1955. Rules and regulations relating to the hunting and trapping of mammals in Massachusetts, effective January 1, 1956, and revoking rules and regulations promulgated on January 8, 1954.

April 3, 1956. Interstate fishing regulations on Wallum Lake, effective April 10, 1956.

April 3, 1956. Rules and regulations governing the taking of fish in interstate ponds lying between Massachusetts and New Hampshire, effective April 10, 1956.

LEGISLATION

The following laws directly affecting the Division of Fisheries and Game were enacted during the legislative session of 1956:

CHAPTER 23, ACTS OF 1956: Resolve reviving and continuing the special commission providing for an investigation and study relative to hunting and fishing within the Commonwealth and certain matters relating thereto, including the subject of the ground water level within the Commonwealth.

CHAPTER 60, ACTS OF 1956: Resolve increasing the scope of the investigation and study of the commission established to make an investigation and study relative to hunting and fishing within the Commonwealth and certain matters relating thereto, including the subject of the ground water level within the Commonwealth.

CHAPTER 254, ACTS OF 1956: An act relative to the penalty for hunting birds by boats and the possession of firearms therein.

CHAPTER 326, ACTS OF 1956: An act authorizing the Director of the Division of Fisheries and Game to take certain land by eminent domain.

CHAPTER 420, ACTS OF 1956: An act relative to permits for the netting of certain fish in the inland waters of the Commonwealth.